

CSI Goals for MRHS Year 1: 2014-15

Goal: To improve student achievement in mathematical problem solving.

Strategies	Professional Learning to Support Goal and Strategies:			
	<i>What</i> will we learn?	<i>Who</i> will learn this?	<i>When</i> will we learn this?	<i>How</i> will we go about the learning?
1. Teachers will implement an inquiry-based approach to problem solving (thinking through problem solving).	1a) Teachers will gain a common understanding of inquiry-based learning, including how to implement an inquiry-based approach to problem solving.	Math Teachers	School-Based PD Days Math PLC Meetings	Workshops to examine examples and discuss what a common approach will look like (Conducted by math teachers, Math Dept. Head, HRSB Math Consultant - Erick Lee)
	1b) Teachers will gain a common understanding of how to develop and implement lessons that focus on learning through problem solving.	Math Teachers	School-Based PD Math PLC Meetings	Workshops to examine examples and discuss what a common approach will look like (Conducted by math teachers, Math Dept. Head, HRSB Math Consultant - Erick Lee)
	1c) Teachers will gain a common understanding of how to teach lessons that are inquiry-based and how to allow students to generate some of the connections.	Math Teachers	PLC Meetings, Prep Time	Examining Dr. Small's resources

	1d) Teachers will gain a common understanding of how to implement effective questioning in our classroom.	Math Teachers	School-Based PD PLC Meetings	Break Through Mathematics workshop Focused PLC work on questioning strategies
2. Teachers will explore and implement strategies to improve students' problem solving ability.	2a) Review, discuss, and develop a common understanding of specific problem solving strategies.	Math Teachers	School-Based PD PLC Meetings	Research and compile a list of strategies and ways to demonstrate these to our students. (Conducted by math teachers, with support from Math Dept. Head and HRSB Math Consultant - Erick Lee)
	2b) Teachers will gain a common understanding of how to teach specific problem solving strategies to students	Math Teachers	PLC Meetings	Create a poster for each classroom of problem solving strategies (Math Teachers).
	2c) Teachers will develop a common understanding of how to help students read critically and use comprehension strategies in their math learning.	Math Teachers	PLC Meetings, School-Based PD	Investigation of reading comprehension strategies, such as the 3-Read and others, accomplished with support from Math Dept. Head and HRSB Math Consultant - Erick Lee, Literacy Dept. Head

<p>3. Math teachers will develop assessment criteria for problem solving.</p>	<p>3a) Teachers will research and investigate different methods of developing assessment criteria.</p>	<p>Math Teachers</p>	<p>PLC Meetings, School-Based PD</p>	<p>Create common assessment criteria (e.g. checklist, rubric) that will be used to assess students' work. Post the rubric in each classroom so students are aware of the criteria. Have students assess chosen exemplars to develop their understanding of the criteria, which will help them self-assess. (Math Teachers)</p>
	<p>3b) Research problem banks and resources of problem solving activities.</p>	<p>Math Teachers</p>	<p>PLC Meetings, School-Based PD</p>	<p>Share and access resources such as Dr. Small, Dan Meyer, Tap Into Teen Minds - Kyle Pearce, NSMathematics.weebly.com (Conducted by math teachers, with support from Math Dept. Head and HRSB Math Consultant - Erick Lee)</p>
	<p>3c) Develop a method of sharing reflections on classroom assessments. What is the best way to share results?</p>	<p>Math Teachers</p>	<p>PLC's</p>	<p>Discuss what has worked well and what needs to be improved in order to monitor changes in students' perceptions and attitudes toward problem solving.</p>

Data Collection to Monitor Change and Inform Practice:

What will we collect?	Who will collect?	When will we do this?	How will we use it?
Administrative Walkthrough Notes	Admin and Dept Heads	Ongoing throughout the year	<p>Provide feedback on the implementation of strategies to support professional growth.</p> <p>Identify areas that require further PD.</p> <p>Monitor changes in teacher practice in relation to the strategies.</p>
Samples of Lesson Plans	Math Teachers	Ongoing throughout the year	Monitor change in teacher lesson plans and practice.
Samples of student work	Math Teachers	Ongoing throughout the year	<p>Monitor and record the evolution of student thinking and problem solving ability.</p> <p>Show evidence of how student work has evolved and a change in the types of products they have produced.</p>
PLC Notes	Math Teachers	Weekly, September-June	Record conversations and discussions related to changes in teacher practice
Student results generated from NSE 10 and Provincial Assessment (Grade 8)	EECD and Math Teachers	<p>NSE 10 written in June - results available in Sept/Oct</p> <p>Grade 8 Assessment written in May/June Results available in Sept/Oct</p>	Review students' performance on analysis (Level 3) questions to see if the changes in problem solving strategies have affected their work on external assessments.

Goal: To improve student achievement in comprehension across all content areas, with a focus in critical thinking.

Strategies	Professional Learning to Support Goal and Strategies:			
	What will we learn?	Who will learn this?	When will we learn this?	How will we go about the learning?
1. Teachers will use an inquiry-based approach to implement comprehension strategies that develop critical thinking.	1a) Teachers will develop a common understanding of an inquiry-based approach by developing a common understanding of how to answer the following questions: What is an inquiry-based approach to teaching critical thinking? What are comprehension strategies that support critical thinking? How do we implement an inquiry-based approach for comprehension in content areas?	All teachers	September 2015 Ongoing (fall, winter, spring)	Session planned with HRSB program staff and implemented by ELA department Peer mentoring and observation for modelling comprehension strategies Classroom visits by teachers (peer mentors) Using "HRSB Secondary Reading Comprehension Document" to support staff in their understanding of reading comprehension
	1b) How do we develop students' shared experiences and understandings as a common starting place for learning?	All teachers	Ongoing	Mini sessions facilitated by lead team/admin

	1c) How do we ensure students are learning the necessary vocabulary to understand the content of our course?	All teachers	Ongoing as units change PLC meetings	Explore relevant formative assessment practices for vocabulary acquisition
2. Through an inquiry-based approach, teachers will provide students with regular opportunities to make connections from their inquiry to a text to strengthen critical thinking skills.	2a) How do we use research to apply up to date and relevant sources to strengthen content?	All teachers	School PD PLC meetings Ongoing throughout the year	Evaluate texts and resources for cultural and current relevance. Find up to date and meaningful resources to supplement areas of need.
	2b) What does real world application look like?	All teachers	School PD PLC meeting Ongoing throughout the year	Plan lessons with time set aside for conferencing with students to answer the question, "What do students know?" Peer mentoring about conferencing
	2c) How do teachers authentically incorporate real world connections into their lessons?	All teachers	Ongoing throughout the year	Get to know the backgrounds and experiences of the students at MRHS. Ensure lesson plans are meeting students where they are at and enhancing their understanding. Learn how technology can support broad global connections.

3. Teachers will work collaboratively in their PLCs, focusing on the use of classroom assessment to plan appropriate instruction and intervention.	3a) What are good formative assessment techniques that promote critical thinking? How do we design lessons that use formative assessment to have students think critically?	ELA/FLA/ Math PLCs	September - November Ongoing throughout the year	Research formative assessment practices, from Jane E. Pollock, Dylan William, Susan Brookhart, and others. Create lesson plans that use these techniques. Collect data regarding how well students understand and can apply a concept.
	3b) When we observe students struggling with critical thinking, what instruction can help students learn? What do I use to systematically record my observations?	ELA/FLA/ Math PLCs	Ongoing throughout the year	In PLCs, discuss "How did it go?" Create an observation checklist/rubric about what objectives are to be met by a lesson. Bring observations back to PLC to investigate further assessment and instruction strategies needed.
	3c) What interventions are appropriate when gaps in learning are found?	ELA/FLA/ Math PLCs	Ongoing throughout the year	Consult personal development team (learning center/ and resource) for support. Board specialists

Data Collection to Monitor Change and Inform Practice:

What will we collect?	Who will collect?	When will we do this?	How will we use it?
------------------------------	--------------------------	------------------------------	----------------------------

Administrative Walkthrough Notes	Admin and Dept Heads	Ongoing throughout the year	<p>Provide feedback on the implementation of strategies to support professional growth.</p> <p>Identify areas that require further PD.</p> <p>Monitor changes in teacher practice in relation to the strategies.</p>
Samples of assessment strategies from lesson plans.	All Teachers		Monitor change in teacher lesson plans and practice.
Samples of student work	All Teachers		<p>Monitor and record the evolution of student thinking and problem solving ability.</p> <p>Show evidence of how student work has evolved and a change in the types of products they have produced.</p>
PLC Notes	ELA/FLA/Math departments	Weekly, September-June	Record conversations and discussions related to changes in teacher practice.
Student results generated from NSE 10 and RWM 8 Provincial Assessment	EECD	<p>NSE 10 written in June - results available in Sept/Oct</p> <p>Grade 8 Assessment written in May/June Results available in Sept/Oct. <i>To be discontinued in 2016.</i></p>	Review students' performance on analysis questions to see if the changes in problem solving strategies have affected their work on external assessments.

Resources We Will Need

Math Resources	Teachers		Dr Marianne Small: Big Ideas from Dr. Small and her website Tim Erickson “United We Solve” “Mathematics Teacher” and “Teaching Mathematics in Middle School” Periodicals - NCTM Kyle Pierce website Dan Meyer website
Comprehension Resources	Teachers		HRSB Secondary Reading Comprehension Document <u>Background Knowledge</u> - Douglas Fisher and Nancy Frey <u>Book Love</u> - Penny Kittle <u>Embedded Formative Assessment</u> - Dylan Wiliam

How will you involve the SAC, the parents, the students, and the wider community in your school improvement plan?

To keep SAC informed about our CSI plan, we will have department heads report upon the progress at designated meetings, and administration (principal, vice principal, and department heads) will answer any questions that the SAC may have regarding this journey. SAC also provides opportunity for parent input and feedback using the Getting to Great surveys. In order to keep parents, students and the wider community informed about the progress of CSI, we will post updates on the school website. The Community Report can let parents know about our CSI goals, as it is available online or in print. The principal can also let parents know during Curriculum Night about the school’s CSI goals, as well as sharing with parents a set of guidelines for problem solving.

To keep students informed about our CSI plan, we will include our goals in our course outlines, on our communication plans, and on our school websites. We will show exemplars to students, making them aware of strategies for problem solving and comprehension. We will highlight times where we are collecting data in classes and what the purpose of the assessment is. Students, in turn, can show their parents what they are learning in class, which is supporting how we improve their ability to read critically and problem solve. Other possibilities may include creating a Math League or Club as a way to promote problem solving or having Problem Solving week.

